



# CALIFORNIA ISO

September 21, 2005

Honorable David H. Meyer  
Acting Deputy Director  
Office of Electricity Delivery and Energy Reliability  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585

Submitted Electronically at [Economic.Dispatch@hq.doe.gov](mailto:Economic.Dispatch@hq.doe.gov)

Dear Mr. Meyer:

I am writing in response to your September 1, 2005 letter concerning the Department of Energy's study of the benefits of economic dispatch pursuant to Section 1234 of the National Energy Policy Act of 2005.

The California ISO implemented Real-Time Market Application (RTMA) on October 1, 2004 as part of Phase 1B of its Market Redesign and Technology Upgrade initiative. RTMA software employs an economic dispatch methodology to automate the routine generation procurement and dispatch activities of the real-time market. The RTMA system replaced the Balancing Energy Ex-Post Price (BEEP) auction system that was previously used to balance dispatch generation in merit order based on manually determined imbalance requirements. The important distinction is that the merit order dispatch did not optimize the dispatch when economic alternatives were available.

RTMA software automatically balances electricity requirements in every dispatch interval and can dispatch units for ramping up two hours in advance if that will result in minimum cost to load. The California ISO has also expanded systems to collect detailed information about the capabilities of generating units so that dispatch instructions can be more specific. Expected benefits of RTMA implementation included:

- Improved control and responsiveness through recognition of resource and interzonal constraints;
- Reduction in uninstructed deviations;
- Elimination of the price distortions and gaming opportunities that resulted from resolving bid overlaps through a "Target Price" mechanism; and
- Reduced regulation costs.

A preliminary analysis of RTMA business objectives performed after 30 days of operations observed the following general benefits:

- Better frequency control and load following;
- Lower Area Control Error (ACE);
- Decrease in average deviations; and
- Improved economic dispatch and lower overall cost.

The ISO's Department of Market Analysis' "Annual Report on Market Issues and Performance" for 2004 documented performance of the real-time imbalance energy market in the last quarter of the year, after RTMA was implemented. Chapter Three of the report, which is attached, noted increases in both dispatch volumes and price volatility of the market following RTMA implementation. Such occurrences are not abnormal, especially when considering that they occurred during the first few weeks after implementation of a new system.

A more complete analysis of RTMA is underway and we hope to offer additional information on its benefits in the future. However, it is difficult to analyze what the world would have been with and without economic dispatch. It is important to note that prior to the ISO the Investor-Owned Utilities also performed economic dispatch using the Energy Management System-Automated Generation Control mechanism. At that time the universe of resources that were part of the economic dispatch system were largely limited to a utility's thermal fleet. The larger footprint of the California ISO now allows the optimization of dispatch over an area that includes the three IOUs and an economic evaluation of imports. The resulting efficiencies should be enhanced by the ISO's ability to include non-utility generation as well.

Finally, it is important to note that the California ISO is in the process of implementing its new Market Redesign and Technology Upgrade project, scheduled for implementation by February 2007. A key component of that project is the implementation of a Security Constrained Economic Dispatch program that will optimize the dispatch of all available resources subject to all known resource and transmission limitations.

Thank you for this opportunity to comment on your study. Please feel free to contact me at 916-608-7323 or via email at [sgreenleaf@caiso.com](mailto:sgreenleaf@caiso.com) if I can provide additional information or clarification.

Sincerely,

Stephen Greenleaf  
Director of Executive Operations